Getting Started with Interface Builder

Session 409

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Getting Started with Interface Builder

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View
(Latitude, Longitude)
North America
Atlantic Ocean
Europe
Africa
South America
Google

- (id)init {
if (self = [super init]) {
element = nil;
atomicElementView = nil;
atomicElementFlippedView = nil;
self.frontViewIsVisible=YES;
self.hidesBottomBarWhenPushed = YES;
}
return self;
}
- (void)loadView {
// create and store a container view
UIView *localContainerView = [[UIView alloc] initWithFrame:
[[UIScreen mainScreen] applicationFrame]];
self.containerView = localContainerView;
[localContainerView release];
containerView.backgroundColor = [UIColor blackColor];
}
.m

View
(Latitude, Longitude)
North America
Atlantic Ocean
Europe
Africa
South America
Google

Demo

Creating a user interface

Recap

Creating a user interface

```objc
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```objc
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```objc
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```objc
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

```objc
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    CGRect viewBounds = [self.view bounds];
    CGFloat viewHeight = CGRectGetHeight(viewBounds);
    CGFloat viewWidth = CGRectGetWidth(viewBounds);

    self.navigationBar = [[UINavigationBar alloc] init];
    self.navigationBar.barStyle = UIBarStyleBlack;
    [self.navigationBar sizeToFit];
    CGFloat navigationBarHeight = self.navigationBar.frame.size.height;
    CGRect navigationRectArea = CGRectMake(0, 0, viewWidth, navigationBarHeight);

    UIToolbar *toolbar = [[UIToolbar alloc] init];
    [toolbar setFrame:navigationRectArea];

    UINavigationItem *topItem = [[UINavigationItem alloc] initWithTitle:@"(Latitude, Longitude)"];
    [self.navigationBar pushNavigationItem:topItem animated:NO];

    UIBarButtonItem *sanFranciscoButton = [[UIBarButtonItem alloc] init];
    sanFranciscoButton.style = UIBarButtonItemStylePlain;
    sanFranciscoButton.image = [UIImage imageNamed:@"GoldenGate.png"];
    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    UIBarButtonItem *worldButton = [[UIBarButtonItem alloc] init];
    worldButton.style = UIBarButtonItemStylePlain;
    worldButton.image = [UIImage imageNamed:@"Globe.png"];
    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    UIBarButtonItem *flexibleSpace = [[UIBarButtonItem alloc]
                    initWithBarButtonSystemItem:UIBarButtonSystemItemFlexibleSpace target:nil action:nil];
    NSArray *toolbarItems = [NSArray arrayWithObjects:worldButton, flexibleSpace, sanFranciscoButton, nil];

    toolbar = [[UIToolbar alloc] init];
    toolbar.barStyle = UIBarStyleBlack;
    [toolbar setItems:toolbarItems animated:NO];
    [toolbar sizeToFit];

    CGFloat toolbarHeight = toolbar.frame.size.height;
    CGFloat toolbarYCoord = viewHeight - toolbarHeight;
    CGRect toolbarRectArea = CGRectMake(0, toolbarYCoord, viewWidth, toolbarHeight);
    [toolbar setFrame:toolbarRectArea];

    CGFloat mapFrameWidth = viewWidth;
    CGFloat mapFrameHeight = viewHeight - navigationBarHeight - toolbarHeight;
    CGRect mapFrame = CGRectMake(0, navigationBarHeight, mapFrameWidth, mapFrameHeight);
    self.map = [[MKMapView alloc] initWithFrame:mapFrame];
    [self.map setMapType:MKMapTypeHybrid];
    [self.map setDelegate:self];

    [self.view addSubview:self.navigationBar];
    [self.view addSubview:map];
    [self.view addSubview:toolbar];

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```objc
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```objc
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```objc
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```objc
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

Creating and Configuring UI

```objc
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    CGRect viewBounds = [self.view bounds];
    CGFloat viewHeight = CGRectGetHeight(viewBounds);
    CGFloat viewWidth = CGRectGetWidth(viewBounds);

    self.navigationBar = [[UINavigationBar alloc] init];
    self.navigationBar.barStyle = UIBarStyleBlack;
    [self.navigationBar sizeToFit];
    CGFloat navigationBarHeight = self.navigationBar.frame.size.height;
    CGRect navigationRectArea = CGRectMake(0, 0, viewWidth, navigationBarHeight);

    UIToolbar *toolbar = [[UIToolbar alloc] init];
    [toolbar setFrame:navigationRectArea];

    UINavigationItem *topItem = [[UINavigationItem alloc] initWithTitle:@"(Latitude, Longitude)"];
    [self.navigationBar pushNavigationItem:topItem animated:NO];

    UIBarButtonItem *sanFranciscoButton = [[UIBarButtonItem alloc] init];
    sanFranciscoButton.style = UIBarButtonItemStylePlain;
    sanFranciscoButton.image = [UIImage imageNamed:@"GoldenGate.png"];
    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    UIBarButtonItem *worldButton = [[UIBarButtonItem alloc] init];
    worldButton.style = UIBarButtonItemStylePlain;
    worldButton.image = [UIImage imageNamed:@"Globe.png"];
    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    UIBarButtonItem *flexibleSpace = [[UIBarButtonItem alloc]
                    initWithBarButtonSystemItem:UIBarButtonSystemItemFlexibleSpace target:nil action:nil];
    NSArray *toolbarItems = [NSArray arrayWithObjects:worldButton, flexibleSpace, sanFranciscoButton, nil];

    toolbar = [[UIToolbar alloc] init];
    toolbar.barStyle = UIBarStyleBlack;
    [toolbar setItems:toolbarItems animated:NO];
    [toolbar sizeToFit];

    CGFloat toolbarHeight = toolbar.frame.size.height;
    CGFloat toolbarYCoord = viewHeight - toolbarHeight;
    CGRect toolbarRectArea = CGRectMake(0, toolbarYCoord, viewWidth, toolbarHeight);
    [toolbar setFrame:toolbarRectArea];

    CGFloat mapFrameWidth = viewWidth;
    CGFloat mapFrameHeight = viewHeight - navigationBarHeight - toolbarHeight;
    CGRect mapFrame = CGRectMake(0, navigationBarHeight, mapFrameWidth, mapFrameHeight);
    self.map = [[MKMapView alloc] initWithFrame:mapFrame];
    [self.map setMapType:MKMapTypeHybrid];
    [self.map setDelegate:self];

    [self.view addSubview:self.navigationBar];
    [self.view addSubview:map];
    [self.view addSubview:toolbar];

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

Creating and Configuring UI

```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    CGRect viewBounds = [self.view bounds];
    CGFloat viewHeight = CGRectGetHeight(viewBounds);
    CGFloat viewWidth = CGRectGetWidth(viewBounds);

    self.navigationBar = [[UINavigationBar alloc] init];
    self.navigationBar.barStyle = UIBarStyleBlack;
    [self.navigationBar sizeToFit];
    CGFloat navigationBarHeight = self.navigationBar.frame.size.height;
    CGRect navigationRectArea = CGRectMake(0, 0, viewWidth, navigationBarHeight);

    UIToolbar *toolbar = [[UIToolbar alloc] init];
    [toolbar setFrame:navigationRectArea];

    UINavigationItem *topItem = [[UINavigationItem alloc] initWithTitle:@"(Latitude, Longitude)"];
    [self.navigationBar pushNavigationItem:topItem animated:NO];

    UIBarButtonItem *sanFranciscoButton = [[UIBarButtonItem alloc] init];
    sanFranciscoButton.style = UIBarButtonItemStylePlain;
    sanFranciscoButton.image = [UIImage imageNamed:@"GoldenGate.png"];
    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    UIBarButtonItem *worldButton = [[UIBarButtonItem alloc] init];
    worldButton.style = UIBarButtonItemStylePlain;
    worldButton.image = [UIImage imageNamed:@"Globe.png"];
    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    UIBarButtonItem *flexibleSpace = [[UIBarButtonItem alloc]
                    initWithBarButtonSystemItem:UIBarButtonSystemItemFlexibleSpace target:nil action:nil];
    NSArray *toolbarItems = [NSArray arrayWithObjects:worldButton, flexibleSpace, sanFranciscoButton, nil];

    toolbar = [[UIToolbar alloc] init];
    toolbar.barStyle = UIBarStyleBlack;
    [toolbar setItems:toolbarItems animated:NO];
    [toolbar sizeToFit];

    CGFloat toolbarHeight = toolbar.frame.size.height;
    CGFloat toolbarYCoord = viewHeight - toolbarHeight;
    CGRect toolbarRectArea = CGRectMake(0, toolbarYCoord, viewWidth, toolbarHeight);
    [toolbar setFrame:toolbarRectArea];

    CGFloat mapFrameWidth = viewWidth;
    CGFloat mapFrameHeight = viewHeight - navigationBarHeight - toolbarHeight;
    CGRect mapFrame = CGRectMake(0, navigationBarHeight, mapFrameWidth, mapFrameHeight);
    self.map = [[MKMapView alloc] initWithFrame:mapFrame];
    [self.map setMapType:MKMapTypeHybrid];
    [self.map setDelegate:self];

    [self.view addSubview:self.navigationBar];
    [self.view addSubview:map];
    [self.view addSubview:toolbar];

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    CGRect viewBounds = [self.view bounds];
    CGFloat viewHeight = CGRectGetHeight(viewBounds);
    CGFloat viewWidth = CGRectGetWidth(viewBounds);



    [self.navigationBar sizeToFit];
    CGFloat navigationBarHeight = self.navigationBar.frame.size.height;
    CGRect navigationRectArea = CGRectMake(0, 0, viewWidth, navigationBarHeight);


    [toolbar setFrame:navigationRectArea];







    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);




    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);



    CGFloat toolbarHeight = toolbar.frame.size.height;
    CGFloat toolbarYCoord = viewHeight - toolbarHeight;
    CGRect toolbarRectArea = CGRectMake(0, toolbarYCoord, viewWidth, toolbarHeight);
    [toolbar setFrame:toolbarRectArea];

    CGFloat mapFrameWidth = viewWidth;
    CGFloat mapFrameHeight = viewHeight - navigationBarHeight - toolbarHeight;
    CGRect mapFrame = CGRectMake(0, navigationBarHeight, mapFrameWidth, mapFrameHeight);









    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
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    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
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- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
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#import <UIKit/UIKit.h>
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@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
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}

@property (nonatomic, retain) UIWindow *window;
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@end
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```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
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@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
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- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
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    [map release];
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```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    CGRect viewBounds = [self.view bounds];
    CGFloat viewHeight = CGRectGetHeight(viewBounds);
    CGFloat viewWidth = CGRectGetWidth(viewBounds);

    [self.navigationBar sizeToFit];
    CGFloat navigationBarHeight = self.navigationBar.frame.size.height;
    CGRect navigationRectArea = CGRectMake(0, 0, viewWidth, navigationBarHeight);

    [toolbar setFrame:navigationRectArea];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    CGFloat toolbarHeight = toolbar.frame.size.height;
    CGFloat toolbarYCoord = viewHeight - toolbarHeight;
    CGRect toolbarRectArea = CGRectMake(0, toolbarYCoord, viewWidth, toolbarHeight);
    [toolbar setFrame:toolbarRectArea];

    CGFloat mapFrameWidth = viewWidth;
    CGFloat mapFrameHeight = viewHeight - navigationBarHeight - toolbarHeight;
    CGRect mapFrame = CGRectMake(0, navigationBarHeight, mapFrameWidth, mapFrameHeight);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
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```
#import <UIKit/UIKit.h>
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@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
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@property (nonatomic, retain) UIWindow *window;
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```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
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- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
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@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
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- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
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```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
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- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

Placement and Sizing

```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    CGRect viewBounds = [self.view bounds];
    CGFloat viewHeight = CGRectGetHeight(viewBounds);
    CGFloat viewWidth = CGRectGetWidth(viewBounds);

    [self.navigationBar sizeToFit];
    CGFloat navigationBarHeight = self.navigationBar.frame.size.height;
    CGRect navigationRectArea = CGRectMake(0, 0, viewWidth, navigationBarHeight);

    [toolbar setFrame:navigationRectArea];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    CGFloat toolbarHeight = toolbar.frame.size.height;
    CGFloat toolbarYCoord = viewHeight - toolbarHeight;
    CGRect toolbarRectArea = CGRectMake(0, toolbarYCoord, viewWidth, toolbarHeight);
    [toolbar setFrame:toolbarRectArea];

    CGFloat mapFrameWidth = viewWidth;
    CGFloat mapFrameHeight = viewHeight - navigationBarHeight - toolbarHeight;
    CGRect mapFrame = CGRectMake(0, navigationBarHeight, mapFrameWidth, mapFrameHeight);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

Placement and Sizing

```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    CGRect viewBounds = [self.view bounds];
    CGFloat viewHeight = CGRectGetHeight(viewBounds);
    CGFloat viewWidth = CGRectGetWidth(viewBounds);

    [self.navigationBar sizeToFit];
    CGFloat navigationBarHeight = self.navigationBar.frame.size.height;
    CGRect navigationRectArea = CGRectMake(0, 0, viewWidth, navigationBarHeight);

    [toolbar setFrame:navigationRectArea];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    CGFloat toolbarHeight = toolbar.frame.size.height;
    CGFloat toolbarYCoord = viewHeight - toolbarHeight;
    CGRect toolbarRectArea = CGRectMake(0, toolbarYCoord, viewWidth, toolbarHeight);
    [toolbar setFrame:toolbarRectArea];

    CGFloat mapFrameWidth = viewWidth;
    CGFloat mapFrameHeight = viewHeight - navigationBarHeight - toolbarHeight;
    CGRect mapFrame = CGRectMake(0, navigationBarHeight, mapFrameWidth, mapFrameHeight);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];
```

```
    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);
```

```
    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```objc
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```objc
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```objc
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```objc
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

```objc
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```objc
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```objc
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```objc
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```objc
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}

- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

Getting Started with Interface Builder

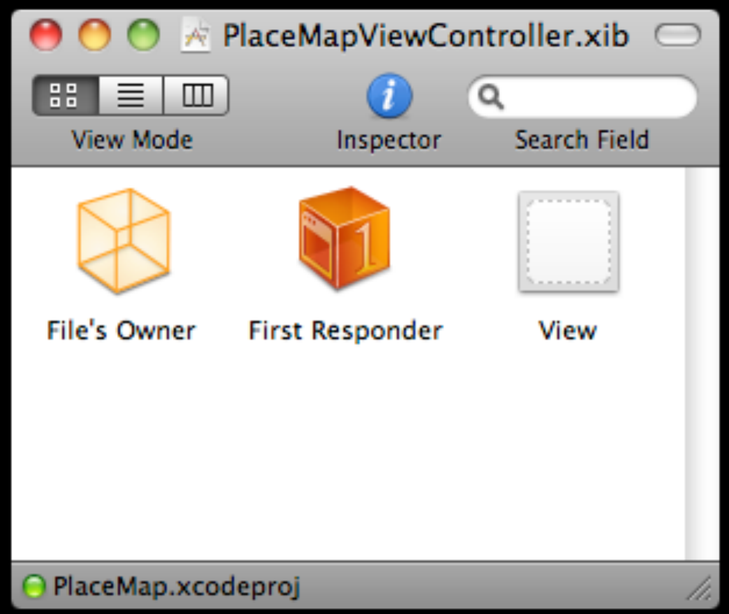
Kelly Keenan
Interface Builder Engineer

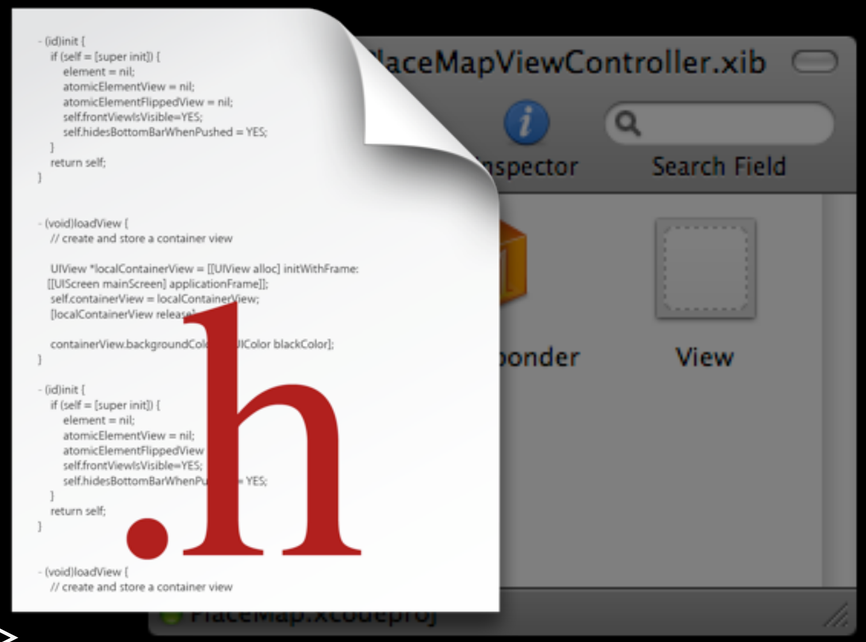
View
(Latitude, Longitude)
North America
Europe
Atlantic Ocean
Africa
South America
Google

- (id)init {
if (self = [super init]) {
element = nil;
atomicElementView = nil;
atomicElementFlippedView = nil;
self.frontViewIsVisible=YES;
self.hidesBottomBarWhenPushed = YES;
}
return self;
}
- (void)loadView {
// create and store a container view
UIView *localContainerView = [[UIView alloc] initWithFrame:
[[UIScreen mainScreen] applicationFrame]];
self.containerView = localContainerView;
[localContainerView release];
containerView.backgroundColor = [UIColor blackColor];
}
.m

Interface Builder and Xcode

Integrating with Xcode





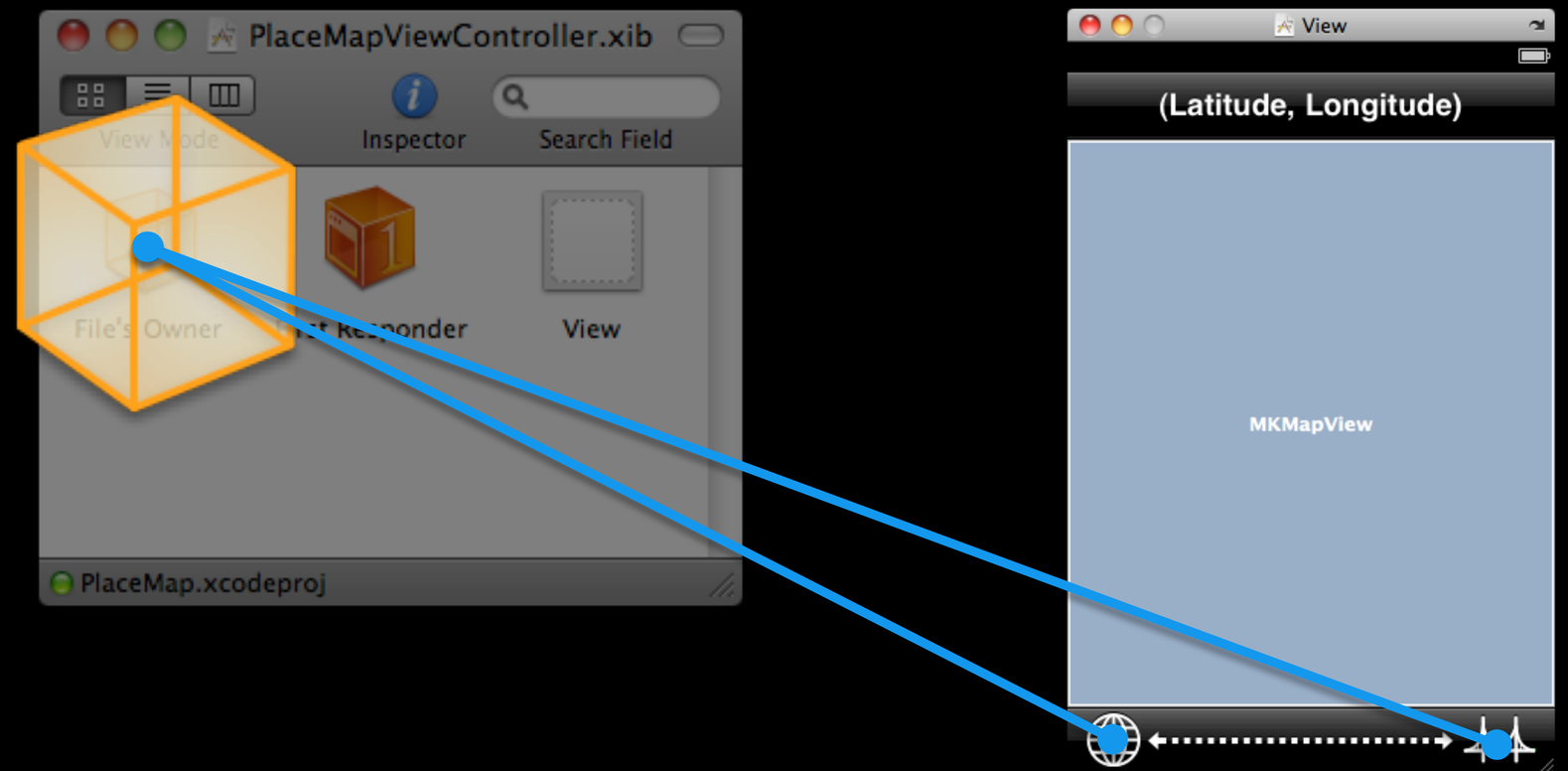

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) IBOutlet MKMapView *map;
@property (retain, nonatomic) IBOutlet UINavigationBar *navigationBar;

- (IBAction)zoomIn:(id)sender;
- (IBAction)zoomOut:(id)sender;

@end
```



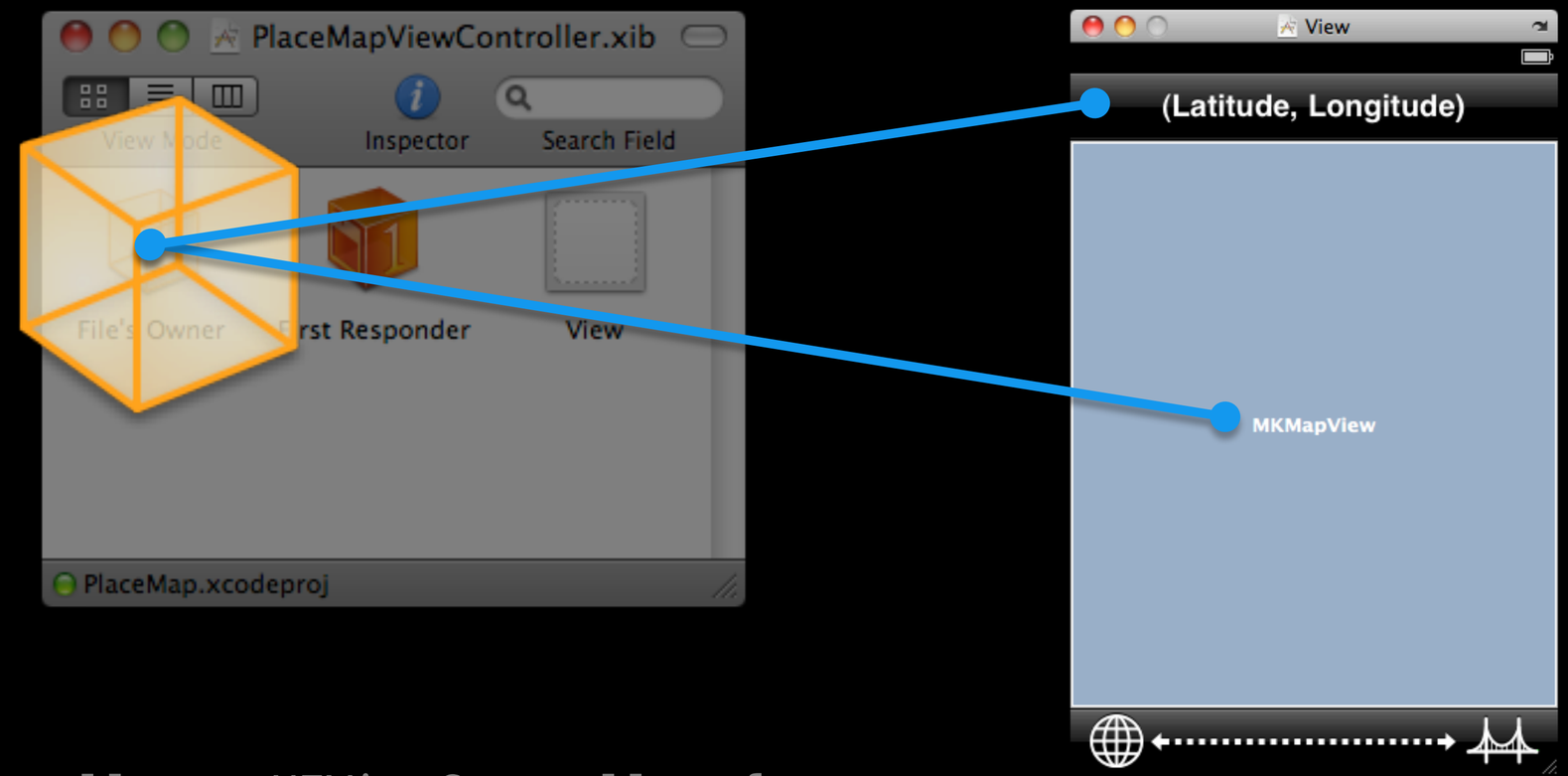

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) IBOutlet MKMapView *map;
@property (retain, nonatomic) IBOutlet UINavigationBar *navigationBar;

- (IBAction)zoomIn:(id)sender;
- (IBAction)zoomOut:(id)sender;

@end
```




```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) IBOutlet MKMapView *map;
@property (retain, nonatomic) IBOutlet UINavigationBar *navigationBar;

- (IBAction)zoomIn:(id)sender;
- (IBAction)zoomOut:(id)sender;

@end
```

Memory Management

```
- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) IBOutlet MKMapView *map;
@property (retain, nonatomic) IBOutlet UINavigationBar *navigationBar;

- (IBAction)zoomIn:(id)sender;
- (IBAction)zoomOut:(id)sender;

@end
```

Demo

Making connections

Recap

Making connections

```objc
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```objc
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```objc
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```objc
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}

- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

Setting Targets and Actions

```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

```
#import <UIKit/UIKit.h>
#import "PlaceMapViewController.h"

@interface PlaceMapAppDelegate : NSObject <UIApplicationDelegate> {
    UIWindow *window;
    PlaceMapViewController *mainViewController;
}

@property (nonatomic, retain) UIWindow *window;
@property (nonatomic, retain) PlaceMapViewController *mainViewController;

@end
```

```
#import "PlaceMapAppDelegate.h"

@implementation PlaceMapAppDelegate

@synthesize window;
@synthesize mainViewController;

- (void)applicationDidFinishLaunching:(UIApplication *)application {
    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
    self.mainViewController = [[PlaceMapViewController alloc] init];
    [self.window addSubview:[self.mainViewController view]];
    [self.window makeKeyAndVisible];
}

- (void)dealloc {
    [mainViewController release];
    [window release];
    [super dealloc];
}

@end
```

```
#import <UIKit/UIKit.h>
#import <MapKit/MapKit.h>

@interface PlaceMapViewController : UIViewController <MKMapViewDelegate> {
    MKMapView *map;
    UINavigationBar *navigationBar;
}

@property (retain, nonatomic) MKMapView *map;
@property (retain, nonatomic) UINavigationBar *navigationBar;

- (void)zoomIn:(id)sender;
- (void)zoomOut:(id)sender;

- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated;

@end
```

```
#import "PlaceMapViewController.h"

@implementation PlaceMapViewController

@synthesize map;
@synthesize navigationBar;

- (void)didReceiveMemoryWarning {
    [super didReceiveMemoryWarning];
}

- (void)updateLocationString:(MKCoordinateRegion)region {
    NSString *locationString = [NSString stringWithFormat:@"(%f, %f)", region.center.latitude, region.center.longitude];
    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
    [navigationBar release];
    [super dealloc];
}
```

Setting Targets and Actions

```
- (void)loadView {
    [super loadView];

    [self setView:[[UIView alloc] initWithFrame:[[UIScreen mainScreen] applicationFrame]]];

    sanFranciscoButton.target = self;
    sanFranciscoButton.action = @selector(zoomIn:);

    worldButton.target = self;
    worldButton.action = @selector(zoomOut:);

    [self updateLocationString:[map region]];
}

- (void)zoomIn:(id)sender {
    CLLocationCoordinate2D homeCoordinate = {37.783367,-122.402759};
    MKCoordinateRegion homeRegion = MKCoordinateRegionMakeWithDistance(homeCoordinate, 500, 500);
    [self.map setRegion:homeRegion animated:YES];
}

- (void)zoomOut:(id)sender {
    CLLocationCoordinate2D globeCoordinate = {30.145127,-40.078125};
    MKCoordinateRegion globeRegion = MKCoordinateRegionMakeWithDistance(globeCoordinate, 100000000, 100000000);
    [self.map setRegion:globeRegion animated:YES];
}

// Map View Delegate Method
- (void)mapView:(MKMapView *)mapView regionDidChangeAnimated:(BOOL)animated {
    [self updateLocationString:[mapView region]];
}
@end
```

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#import <UIKit/UIKit.h>
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    self.window = [[[UIWindow alloc] initWithFrame:[[UIScreen mainScreen] bounds]] autorelease];
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    [[self.navigationBar topItem] setTitle:locationString];
}

- (void)dealloc {
    [map release];
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    [super dealloc];
}

- (void)loadView {
    [super loadView];

    [self updateLocationString:[map region]];
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Creating Window and Controller

```
- (void)loadView {
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```

View
(Latitude, Longitude)
North America
Atlantic Ocean
Europe
Africa
South America
Google

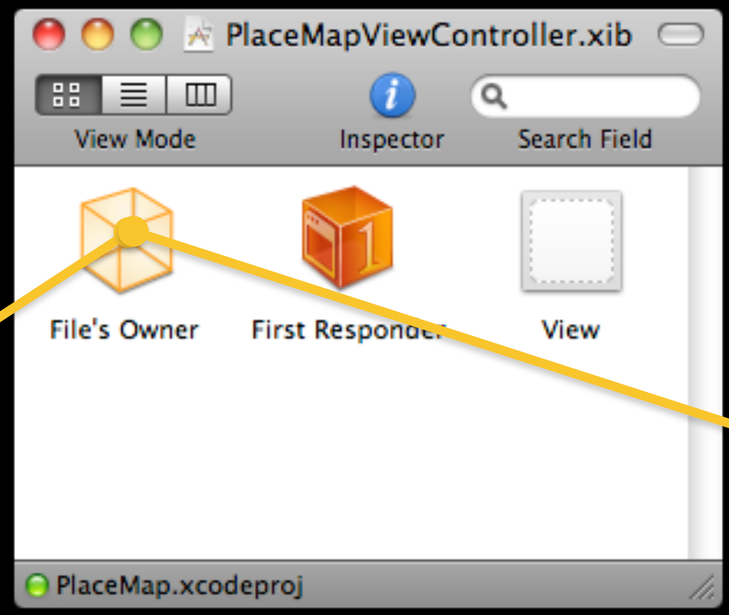
- (id)init {
if (self = [super init]) {
element = nil;
atomicElementView = nil;
atomicElementFlippedView = nil;
self.frontViewIsVisible=YES;
self.hidesBottomBarWhenPushed = YES;
}
return self;
}
- (void)loadView {
// create and store a container view
UIView *localContainerView = [[UIView alloc] initWithFrame:
[[UIScreen mainScreen] applicationFrame]];
self.containerView = localContainerView;
[localContainerView release];
containerView.backgroundColor = [UIColor blackColor];
}
.m

What object manages my views?

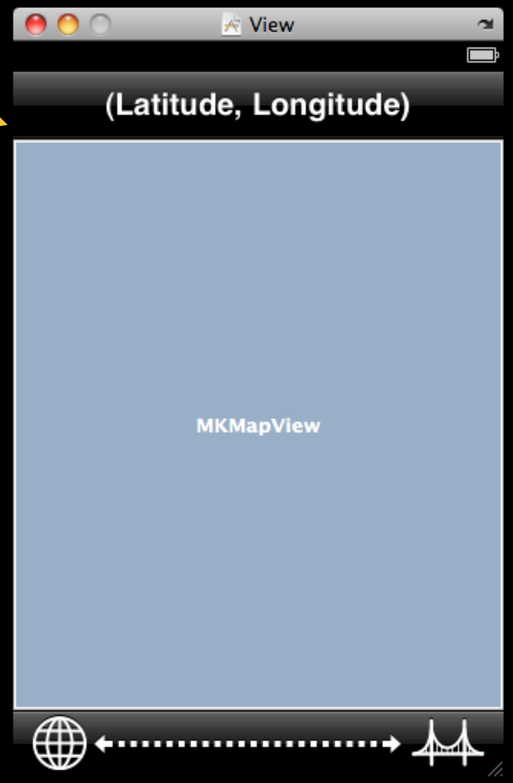
View Controller

How do I link my view controller to my view?

File's Owner

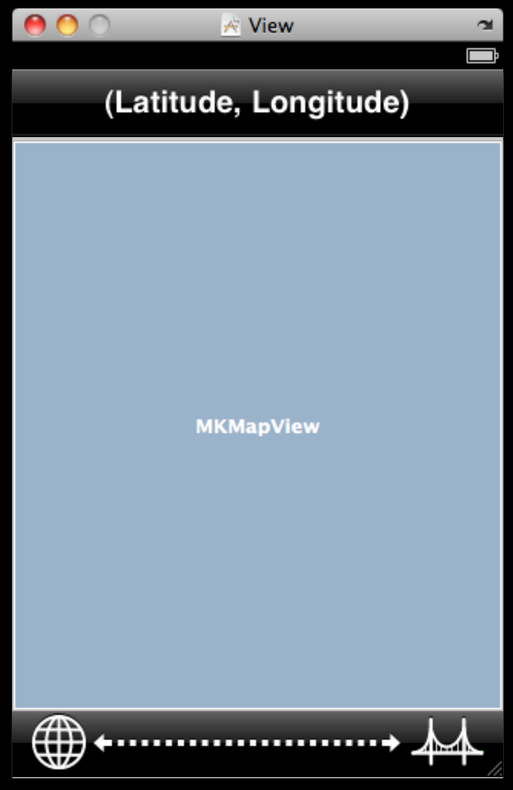

PlaceMapViewController.xib
View Mode
Inspector
Search Field
File's Owner
First Responder
View
PlaceMap.xcodeproj

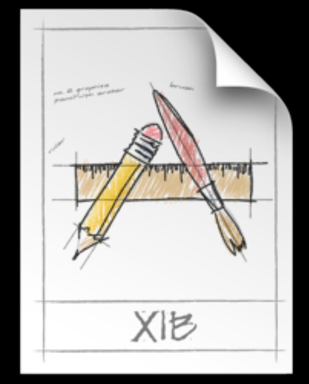
- (id)init {
if (self = [super init]) {
element = nil;
atomicElementView = nil;
atomicElementFlippedView = nil;
self.frontViewIsVisible=YES;
self.hidesBottomBarWhenPushed = YES;
}
return self;
}
- (void)loadView {
// create and store a container view
UIView *localContainerView = [[UIView alloc] initWithFrame:
[[UIScreen mainScreen] applicationFrame]];
self.containerView = localContainerView;
[localContainerView release];
containerView.backgroundColor = [UIColor blackColor];
}
.h


View
(Latitude, Longitude)
MKMapView

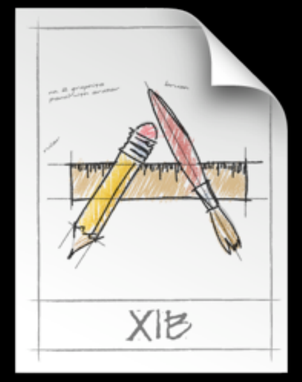
What happens when I save my interface file?

Saving Your Interface File

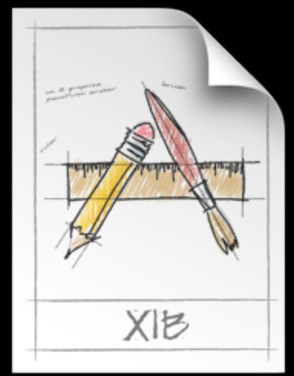




Saving Your Interface File



Saving Your Interface File



When does the view controller load my view?

Load View

You Respond to Delegate

```
- (NSArray *)loadNibNamed:(NSString *)name
[self.window addSubview:[self.mainViewController view]];
- (owner:(id)owner
options:(NSDictionary *)options;
```

Where can I configure my view?

View Did Load

View Controller

```
- (void)viewDidLoad {
    [super viewDidLoad];
    [self updateLocationString:[map region]];
}
```

What happens when my view is loaded?

Runtime

9:42 AM
(30.145127, -40.078125)
North America
Atlantic Ocean
Europe
Africa
South America
Google

View
(Latitude, Longitude)
North America
Atlantic Ocean
Europe
Africa
South America
Google

- (id)init {
if (self = [super init]) {
element = nil;
atomicElementView = nil;
atomicElementFlippedView = nil;
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.m

More Information

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jurewitz@apple.com

Documentation
Mac OS X Human Interface Guidelines
http://developer.apple.com/ue

Interface Builder User Guide
http://developer.apple.com/documentation/DeveloperTools/Conceptual/IB_UserGuide/Introduction/Introduction.html

Related Sessions

iPhone Application Design Using Interface Builder	Pacific Heights Wednesday 10:30AM

Labs

Getting Started With Interface Builder	iPhone Lab A Wednesday 2:00PM
iPhone Application Design Using Interface Builder	iPhone Lab C Thursday 2:00PM

Q&A

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